

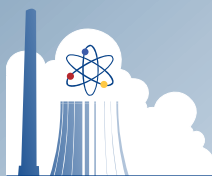


BROOKHAVEN NATIONAL LABORATORY

One of ten national laboratories overseen and primarily funded by the Office of Science of the U.S. Department of Energy (DOE), Brookhaven National Laboratory conducts research in the physical, biomedical, and environmental sciences, as well as in energy technologies and national security. Brookhaven Lab also builds and operates major scientific facilities available to university, industry and government researchers. Brookhaven is operated and managed for DOE's Office of Science by Brookhaven Science Associates, a limited-liability company founded by the Research Foundation of the State University of New York on behalf of Stony Brook University, the largest academic user of Laboratory facilities, and Battelle, a nonprofit, applied science and technology organization. Visit Brookhaven Lab's electronic newsroom for links, news archives, graphics, and more: <http://www.bnl.gov/newsroom>

NEXT GENERATION SAFEGUARDS INITIATIVE

In 2007, the U.S. Department of Energy's National Nuclear Security Administration (NNSA) launched the Next Generation Safeguards Initiative (NGSI), a robust, multi-year program to develop the policies, concepts, technologies, expertise, and international safeguards infrastructure necessary to strengthen and sustain the international safeguards system as it evolves to meet new challenges. The Human Capital Development subprogram of NGSI supports the recruitment, education, training, and retention of a new generation of international safeguards professionals.



Nuclear Nonproliferation, Safeguards, and Security (NNSS) in the 21st Century

Brookhaven National Laboratory
June 15 - June 26, 2015

ELIGIBILITY REQUIREMENTS

Applicants must:

- Be 18 years or older
- Have valid medical insurance for the duration of the course
- Be in or entering graduate school or have recently completed graduate school

APPLICATION REQUIREMENTS

- The application form can be found at: <http://www.bnl.gov/nnsscource>
- Transcripts of your undergraduate and graduate records (official or non-official)
- One letter of recommendation and two references
- Application form can be completed online. Supporting documents can be uploaded directly in the application.

APPLICATION DEADLINES

Applications, transcripts, and letters of recommendation must be received by March 15, 2015.

Applicants will be notified of the outcome of the selection process by April 15, 2015.

Successful applicants will receive:

- Housing at or near Brookhaven National Laboratory during the period of the course
- A stipend of \$500 is available based on a demonstration of need



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founded by Stony Brook University and Battelle

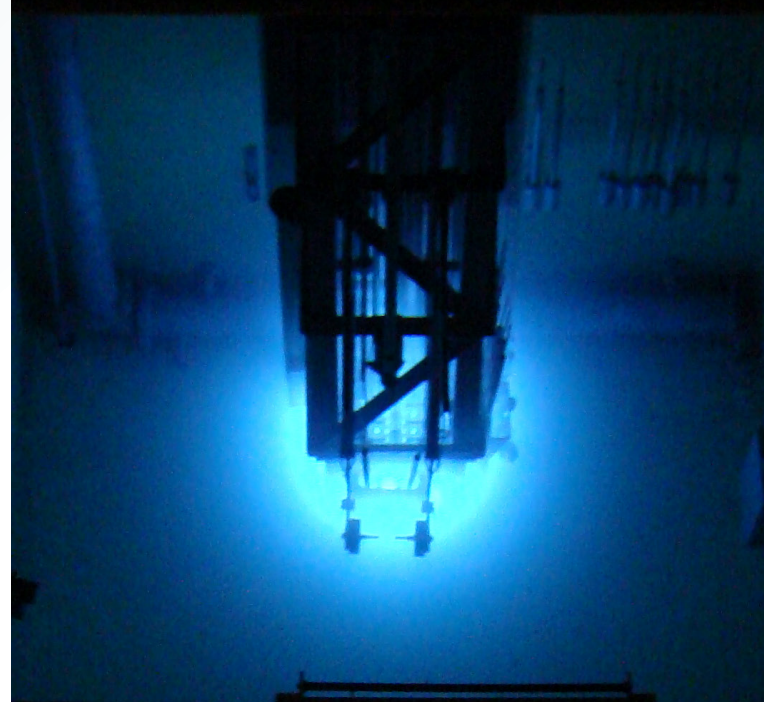
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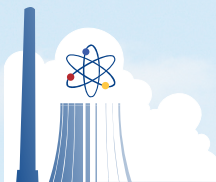


An NGSI Course for Prospective,
Current, and Recent Graduate Students
<http://www.bnl.gov/nnsscource>

2015



Nonproliferation and National Security Department



Nuclear Nonproliferation, Safeguards, and Security in the 21st Century

A Course for Prospective, Current, and Recent Graduate Students in the Physical Sciences, Engineering, and International Relations

The course presents students with critical assessments of current nuclear nonproliferation issues, confronts them with the hard choices needed to address them, and provides in-depth analysis of the technical and legal framework needed to assess policy options. The focus is on the central element of this regime, the Nuclear Non-Proliferation Treaty (NPT) and its verification mechanism, the IAEA safeguards system. Exercises and demonstrations introduce students to the techniques and technologies of international safeguards and the challenges faced by international inspectors in the field. Above all, the course aims to give participants the knowledge, analytic tools, and the motivation to contribute to the improvement of the nonproliferation regime.

The course begins with a primer on the nuclear fuel cycle, highlighting the inextricable link between the peaceful uses of nuclear energy and the risk of proliferation. Historical material starts with early efforts to internationalize the nuclear fuel cycle and continues through Atoms for Peace, President Eisenhower's initiative to share the benefits of nuclear energy. The course reviews the negotiation of the Nuclear Non-Proliferation Treaty (NPT) and assesses the outcome. This is used to illustrate underlying issues, many of which remain today, especially the establishment in the Treaty of non-nuclear-weapon states and nuclear-weapon states and the tension between the pursuit of full fuel-cycles and the risk of proliferation. Then a series of lectures explores the history of peaceful uses of nuclear energy and the development of the IAEA safeguards system.

Pride of place in the course is given to IAEA safeguards. Lectures address such topics as the structure of NPT comprehensive safeguards agreements, material balance accounting, design information verification, the design of safeguards approaches, and inspection tools and measurements. Because of their nonproliferation significance, IAEA verification approaches at enrichment and reprocessing plants are covered. Special attention is paid to the strengthened safeguards system (including the Model Additional Protocol), which was triggered by the 1991 discovery of Iraq's secret nuclear weapons program and whose evolution continues today.

A highlight of the second week is a day devoted to a design information verification at the shut-down Brookhaven Medical Research Reactor, where students play the role of IAEA inspectors. The exercise also includes a demonstration of physical inventory practices for nuclear material, with real measurements and a search for anomalies involving surrogate material.

To demonstrate the link between safeguards and security, Brookhaven staff demonstrate how radiation monitors work in detecting radiation sources on vehicles and how specific radioactive isotopes can be identified.

Throughout the course, students are asked to learn and present material on key elements of the nonproliferation regime, and country experts provide insights into regional nuclear non-proliferation issues in Northeast Asia, South Asia, and the Middle East.

For more information go to:

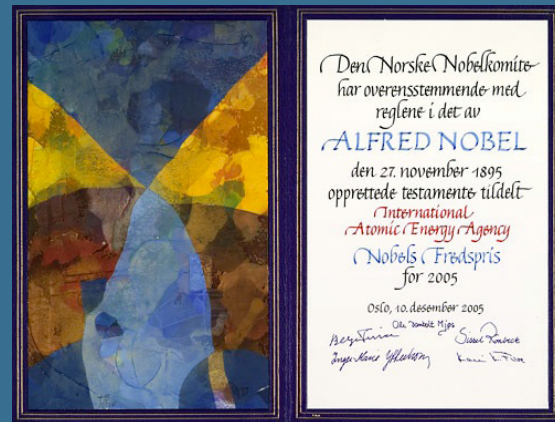
<http://www.bnl.gov/nnsscource>

Questions can be sent to nnss@bnl.gov

NNSS 2015 Course Topical Areas

- Nuclear Fuel Cycle
- Nuclear Weapons
- Strategic Arms Control
- Nuclear Nonproliferation Treaty (NPT)
- International Atomic Energy Agency (IAEA)
- Nuclear Nonproliferation Successes and Failures
- IAEA Safeguards: Concepts and Implementation Examples
- IAEA Safeguards Design Information Verification Exercise
- IAEA Safeguards Inventory Demonstration
- South Asia, Iran and North Korea
- Authorities of the IAEA
- Strengthened IAEA Safeguards: Concepts and Implementation Examples
- Demonstration and Exercise on Detecting Radioactive Materials
- Other WMD Issues

In 2005 the Nobel Peace Prize was jointly awarded to the IAEA and Dr. Mohamed ElBaradei, the Director General of the IAEA from 1997 through 2009.



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Artist: Trond Botnen

Calligrapher: Inger Magnus

Dean Calma/IAEA



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Vadim Mouchkine/IAEA